

Cascadable Amplifier 1000 to 4000 MHz

Rev. V3

Features

- LOW NOISE FIGURE: 2.0 dB (TYP.)
- MEDIUM OUTPUT POWER: +18.3 dBm (TYP.)
- HIGH EFFICIENCY: 65 mA (TYP.) @ +5 Vdc
- PHEMT AMPLIFIER

Description

The A4011 microwave amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability. This single stage PHEMT feedback amplifier design displays impressive performance characteristics over a broadband frequency range. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

| Part Number | Package |
|-------------|-------------------|
| A4011 | TO-8 |
| SMA4011 | Surface Mount |
| CA4011 ** | SMA Connectorized |

** The connectorized version is not RoHs compliant.

Product Image



Electrical Specifications: $Z_0 = 50\Omega$, $V_{CC} = +5 V_{DC}$

| Parameter | Units | Typical | Guaranteed | |
|---------------------------------|-------|---------------|---------------|----------------|
| | | 25°C | 0° to 50°C | -54° to +85°C* |
| Frequency | GHz | 0.8-4.5 | 1.0-4.0 | 1.0-4.0 |
| Small Signal Gain (min) | dB | 15.5 | 13.0 | 12.5 |
| Gain Flatness (max) | dB | ±0.4 | ±0.7 | ±1.0 |
| Reverse Isolation | dB | 16 | | |
| Noise Figure (max) | dB | 2.0 | 2.7 | 3.2 |
| Power Output @ 1 dB comp. (min) | dBm | 18.3 | 16.5 | 16.0 |
| IP3 | dBm | +29 | | |
| IP2 | dBm | +45 | | |
| Second Order Harmonic IP | dBm | +50 | | |
| VSWR Input / Output (max) | | 1.4:1 / 1.4:1 | 2.0:1 / 1.9:1 | 2.2:1 / 2.0:1 |
| DC Current @ 5 Volts (max) | mA | 65 | 70 | 75 |

Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|--|------------------|
| Storage Temperature | -62°C to +150°C |
| Case Temperature | +125°C |
| DC Voltage | +7 V |
| Continuous Input Power | +13 dBm |
| Short Term Input power (1 minute max.) | 100 mW |
| Peak Power (3 μsec max.) | 0.25 W |
| "S" Series Burn-In Temperature (case) | +125°C |

Thermal Data: $V_{CC} = +5 V_{DC}$

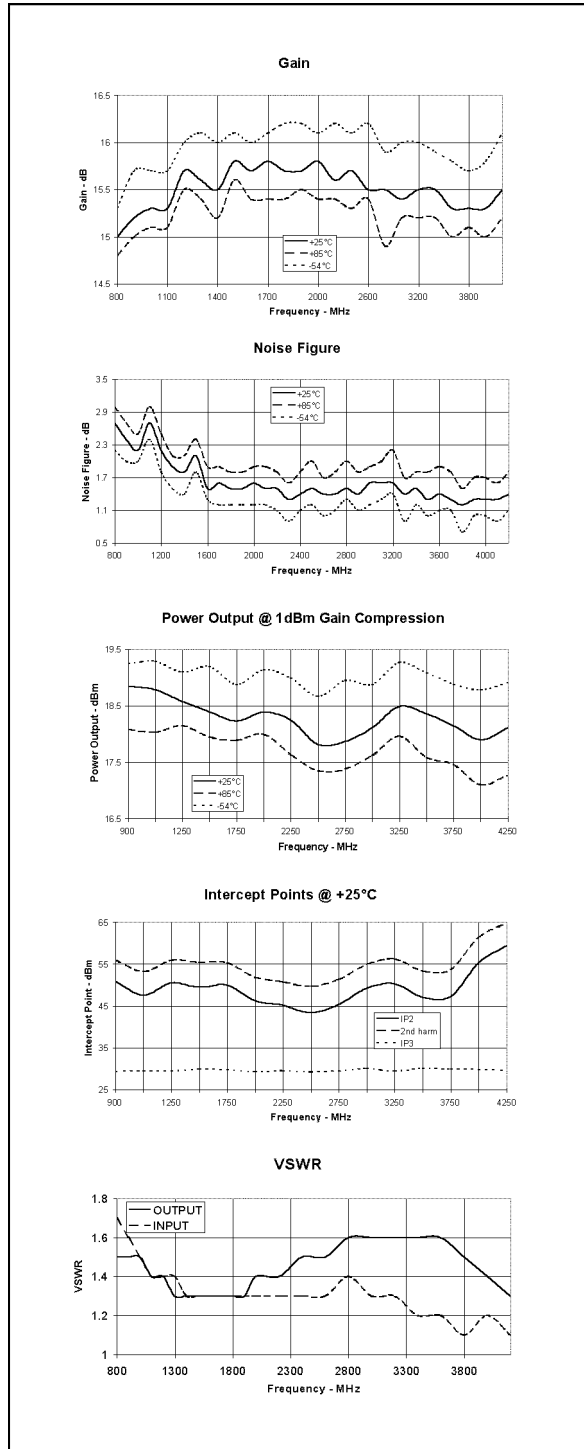
| Parameter | Rating |
|---|--------|
| Thermal Resistance θ_{jc} | 47°C/W |
| Transistor Power Dissipation P_d | 0.2 W |
| Junction Temperature Rise Above Case T_{jc} | +9.4°C |

1 * Over temperature performance limits for part number CA4011, guaranteed from 0°C to +50°C only.

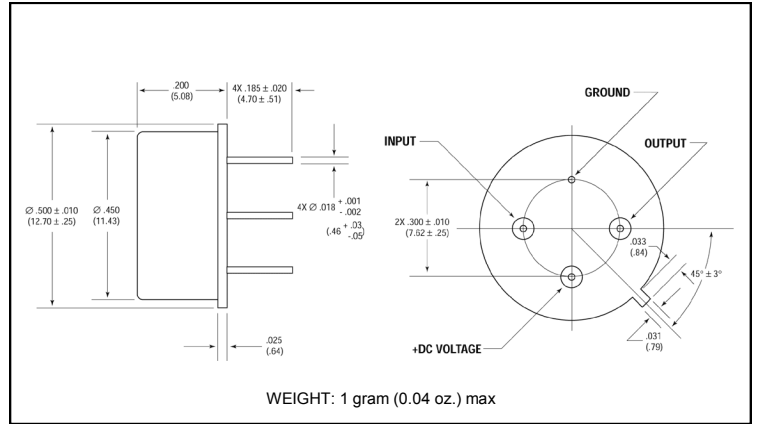
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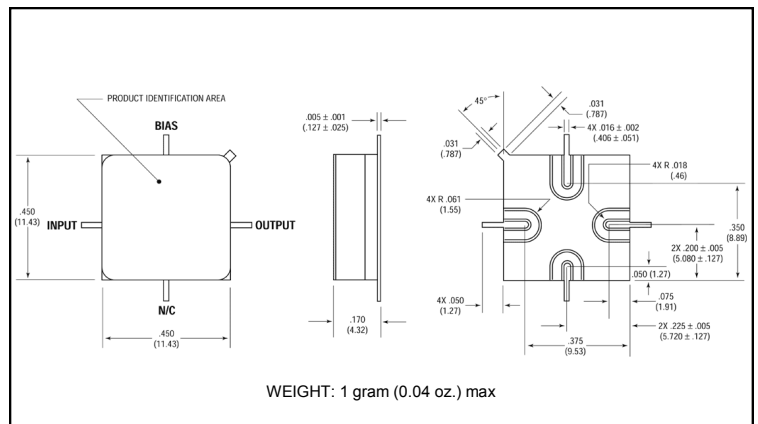
Typical Performance Curves at +25°C



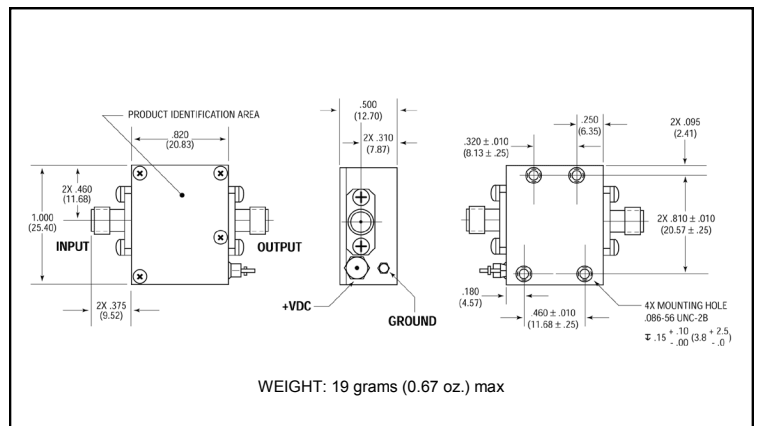
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



* Dimensions are inches (millimeters) ±0.015 (0.38) unless otherwise specified.

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